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TITLE : COATING SOLUTION COMPOSITION FOR FORMING THIN TITANIUM DIOXIDE FILM

ABSTRACT : PROBLEM TO BE SOLVED: To ensure stability for a soln. of a titanium complex and to form a superior thin titanium dioxide film with the soln. by using aromatic and aliphatic amines in combination at the time of preparing the soln.

SOLUTION: A titanium complex is allowed to react with arom. and aliphatic amines in a solvent, preferably 1-4C lower alcohol to obtain the objective coating soln. The titanium complex is easily obtd. by heating and stirring a suspension or soln. of aminopolycarboxylic acid or its salt and an aq. soln. of titanium (IV) sulfate in inert gas. The arom. amine is, e.g. aniline and the aliphatic amine is, e.g. n-propylamine. The total amt. of the amines is 1-5 times (mol) the amt. of the complex. The coating soln. is very stable and forms a uniform stable thin film with a simple device. When a thin film is formed on a substrate of a metal or glass, the top of the substrate is coated with the coating soln. by spin coating or other method, the solvent is evaporated and firing is carried out in an oven at a high temp. of $\geq 400^{\circ}\text{C}$.

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